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(54) Title: **TOPOLOGICAL VOICEPRINTS FOR SPEAKER IDENTIFICATION**

**Known Speaker's
Voice Mold in Data Bank**

| | | | |
|---|---|---|---|
| | 2 | | |
| | 0 | 0 | |
| | 2 | | 1 |
| 1 | | | |

**Unknown Speaker's
Voice Mold Obtained from Voice**

| | | | |
|---|---|----|----|
| 2 | X | -1 | 0 |
| 0 | X | 0 | -2 |
| 1 | 2 | 0 | 1 |
| X | 2 | 0 | 1 |

(57) Abstract: The speaker recognition techniques of this application use a topological description of his/her voice spectral properties in order to use it as a biometric characterization for the speaker. Distinctly different from computing distances between spectral curves obtained from voices of different speakers in various spectral analysis methods, such topological features provide a one-to-one correspondence between a subject and a mold represented by a set of rational numbers.

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